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A new *Botrychium* from Jamaica*

WILLIAM RALPH MAXON

(WITH PLATE 6)

The systematic status of the members of the group of *Botrychium ternatum* has been the subject of a good deal of comment within the past ten years. Naturally there have developed legitimate differences of individual judgment and interpretation: and, while in one or two instances the results offered have been such as to suggest doubt that the author was in actual possession of some of the forms under discussion, it is probably true that no two students working with the same series of specimens would arrive at conclusions absolutely identical. It becomes often an exceedingly difficult matter to decide whether a given series of plants — and too often a small series — constitutes a sufficiently marked and coherent assemblage to stand apart, specifically distinct, from an obviously related form; or, whether, on the other hand, it is to be regarded as a mere local variation induced, it may be, by habitat.

Of the so-called species recently recognized,† several — and they are, in the opinion of the writer, very few in number — do not appear to be valid species in the ordinary sense of the term: they lack distinctive diagnostic characters and pass insensibly into another form. And, it must be confessed, a study of the entire group must of necessity be more truly comparative and involve a wider view than is usually to be required in most groups of pteridophytes. But the fact remains, that there *are* distinct groups, inhabiting definitely restricted areas and comprising individuals in close agreement in habital and foliage characters, which offer comparatively small but absolute differences from allied groups of individuals from other regions; and it appears to the writer that, unless reduction of the most sweeping sort is to be made, it is

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† Underwood, An index to the described species of *Botrychium*. Bull. Torrey Club 30: 42-55. Ja 1903.

undoubtedly the most logical proceeding to recognize these as species and to designate them as binomials. The recognition of subspecies implies or ought to imply the existence of specimens showing the transition from the typical form to the subspecific center of variation. In two or possibly three instances among the recently recognized "species" referred to above, such intermediates seem to exist, and the writer hopes to discuss these later at greater length; but in the majority of cases intermediates (if existent at all) have not found their way into the herbaria, and the supposed justification for the reduction practiced by several American writers appears to be contained in the fast disappearing fallacy that the sum of the differences and not their constancy is the criterion for specific segregation, — a logical pursuit of which principle would lead by no very circuitous route to the treatment accorded the group by Hooker and Baker.

The plant here to be described is not associable specifically with any described form. It may very appropriately bear the name of one whose studies must necessarily prove largely instrumental in a final elucidation of this perplexing group.

***Botrychium Underwoodianum* sp. nov.**

Plant of large stature (3 dm.), to be placed between *B. Jenmani* and *B. decompositum* of the *ternatum* group. Roots copious, stout, cordlike, corrugate above, fasciculate from a short (1–2 cm.) underground prolongation of the axis: common stalk short (about 2 cm.), bud densely covered with a compact growth of silky hairs: sterile division short-petiolate (5–10 cm.), 12–20 cm. broad and nearly as long, commonly pentagonal in shape, tripinnate, the basal pinnules of the lowermost lateral divisions usually much elongated and again deeply pinnatifid; ultimate segments relatively very large, bluntly obovate or broadly spatulate, the margins evenly and finely crenate-dentate with an occasional shallow lobation; texture slight, resembling that of *B. obliquum*; venation manifest: sporophyl about 30 cm. long; panicle rather lax, about 8 cm. long, bipinnate; sporangia large, sessile.

JAMAICA. — Type in the herbarium of the New York Botanical Garden, Jenman collection. Co-type in the U. S. National Herbarium (no. 521103). Of the several specimens collected by Jenman only one is fertile; and thus, though smaller than usual and less characteristic in the outlines of the sterile division, is here figured

as the type. Other Jamaican specimens are: *Underwood* 179 and 2620, *Maxon* 1573, and *D. E. Watt* (U. S. N. M. 520982), all from the vicinity of Cinchona, altitude about 1500 meters; and two specimens in the herbarium of Capt. John Donnell Smith, communicated by Hart. The last, though indicated by Dr. Christ as representing a new species, were not described, presumably on account of their immature condition.

The series at hand indicates that *B. Underwoodianum* is one of the most distinct species in the *ternatum* group. As stated, it appears to be most nearly related to *B. Jenmani* Underw.* and *B. decompositum* Mart. & Gal.† From the former it differs conspicuously in its greater size and more delicate texture; and from the latter imperfectly known species very noticeably in the following distinctive characters: (1) the peculiar shape and spacing of the segments, and (2) the wide divergence of the main divisions which spread ordinarily at an angle of nearly or quite ninety degrees. There is, moreover, in most specimens so pronounced a basiscopic development of the first lateral division as to give a decided pentagonal shape to the leaf, though this feature is not especially noticeable in the type specimen.

The type measures 13 cm. in width; others 20 cm. The illustration is at two thirds natural size and represents the type, therefore, on the printed page at less than one half the actual dimensions frequently attained by individuals of this species.

The small figure at the right represents a bud (exposed) in the enveloping hollow base of a sterile plant (Jenman collection). The upper bud is quite the same and is produced upon nearly all the sterile plants at a point from which the sporophyll would normally have had its origin.

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* Fern Bull. 8: 59. 1900. (Type from Jamaica.)

† Mém. Acad. Sci. Brux. 15⁵: 15. pl. 1. 1842. (Type from Mexico.)

Explanation of plate 6

BOTRYCHIUM UNDERWOODIANUM sp. nov.

Type specimen, at two-thirds natural size. The detailed drawing showing buds is from a second specimen in the Jenman collection ; two-thirds natural size.



BOTRYCHUM UNDERWOODIANUM Maxon.